

Response Under 37 C.F.R. § 1.116

Applicant: E. Scott Hagermoser et al.

Serial No.: 10/658,490

Filed: September 8, 2003

Docket No.: 59004US002

Title: VEHICLE TOUCH INPUT DEVICE AND METHODS OF MAKING SAME

REMARKS

This communication is responsive to the Final Office Action mailed September 25, 2007.

In the Final Office Action, claims 1-11, 13-23, and 27-38 were rejected under 35 U.S.C. § 103(a) as unpatentable over Gillespie et al., U.S. Patent No. 7,109,978 ("Gillespie") and Pryor, U.S. Patent No. 7,084,859 ("Pryor"), and further in view of Neuman et al., U.S. Patent No. 5,942,814 ("Neuman"); claim 12 was rejected under 35 U.S.C. § 103(a) as unpatentable over Gillespie, Pryor, Neuman, and further in view of Nagasaka, U.S. Patent Publication No. US2004/0195031 ("Nagasaka"); and claims 24-26 were rejected under 35 U.S.C. § 103(a) as unpatentable over Gillespie, Pryor, and Neuman and further in view of Reighard et al., U.S. Patent No. 5,432,569 ("Reighard").

With this Response, claims 1-38 remain pending in the application and are presented for reconsideration and allowance.

Claim Rejections under 35 U.S.C. § 103(a)

The arguments presented in the Amendment and Response filed on June 22, 2007 are incorporated into this Response *in toto*.

Claims 1-11, 13-23, and 27-38 were rejected under 35 U.S.C. § 103(a) as unpatentable over Gillespie and Pryor, and further in view of Neuman. We believe that a *prima facie* case of obviousness has not been established based on the cited references, and respectfully request withdrawal of the rejections to claims 1-38.

The Examiner's detailed "Response to Arguments" provided at pages 2-3 in the Final Office Action mailed September 25, 2007 is noted with appreciation. However, portions of the Response to Arguments provided in the Final Office Action are inconsistent with the position adopted by the Examiner in the Office Action mailed on March 23, 2007. In particular, the Examiner states at page 3, line 5 of the Final Office Action mailed September 25, 2007 that in the purported combination of Gillespie, Pryor, and Neuman that "the insulating layer 36 is the airbag cover." (Emphasis in the original). In the Office Action mailed on March 23, 2007 the Examiner had taken a contrary position in stating at page 4, line 8 that:

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Gillespie as modified by Pryor does not expressly disclose the capacitive touch sensor to be disposed between an airbag and an airbag cover layer. However, Neuman teaches a structure of placing a capacitive sensor between an airbag ("704") and an airbag cover layer ("cover layer 702") [fig. 7].

The insulating layer 36 of Gillespie is a component of the "preferred sensing plane 10" (column 10, line 50 and column 11, line 36) and must be a part of any purported combination. The insulating layer 36 is not an airbag or an airbag cover. Gillespie is silent regarding airbag components. If the insulating layer 36 of Gillespie (*Gillespie* beginning at column 10, line 55) is viewed to be the airbag cover, as the Examiner now asserts, then the purported combination fails to teach or suggest at least the pending claim limitations of a capacitive touch sensor disposed between an airbag and an airbag cover of independent claim 1; disposing a capacitive touch sensor on a back surface of an airbag cover opposing a finished surface of independent claim 13; and a capacitive touch sensor disposed behind a surface in a vehicle of independent claim 28. Applicants note that the Office Action mailed on March 23, 2007 conceded at page 4 that Gillespie (having insulating layer 36) as modified by Pryor does not teach or suggest a capacitive touch sensor disposed between an airbag and an airbag cover.

In the alternative, if the object position detector of Gillespie is modified by the tactile touch screen display of Pryor and disposed behind the airbag cover layer 702 of Neuman, then this combination fails to establish a *prima facie* case of obviousness for two reasons: 1) it is believed that the insulating layer 36 of Gillespie (a required component of the Gillespie sensing plane 10) would be rendered unsatisfactory by the combination, and 2) Pryor expressly excludes locating a touch screen relative to a steering wheel in a position that would "sacrifice airbag function."

First, insulating layer 36 of Gillespie is disclosed to be a thin layer that is configured to "keep capacitive coupling large." *Gillespie* at column 11, line 39. Gillespie discloses at column 11, lines 45-56 that there are two different capacitive effects taking place when a finger approaches the touch sensor array 22: the first capacitive effect is trans-capacitance (coupling between sense pads 34), and the second capacitive effect is self-capacitance (coupling to virtual ground). Sensing circuitry in Gillespie is coupled to touch sensor array 22 and responds to

changes in either or both of these capacitances. Gillespie states beginning at column 11, line 51: “This is important because the relative sizes of the two capacitances change greatly depending on the user environment.” Placing the insulating layer 36 required by sensing plane 10 of Gillespie behind airbag cover layer 702 of Neuman would fail to keep capacitive coupling large, as required by Gillespie at column 11, line 39. For at least this reason it is believed that a *prima facie* case of obviousness has not been established that renders the pending claims obvious over the cited references.

Second, Pryor provides a center console touch screen 105 (Figures 1c and 1e; column 13, lines 19-28; and column 15, lines 27-34). Pryor mandates a list of requirements in column 4 for his touch screen displays, one of which is Requirement 7 that requires the touch screen not sacrifice airbag function, and “**thus must not be where the airbag is**, or the airbag/and screen module **must** be of another design.” The only example of an airbag in Pryor is one employed with an off-axis image surface distortion system. Pryor discloses at Column 27, lines 43-54 that an advantage of the surface distortion system is that the material can be anything sufficiently transparent that sufficiently deflects light such that the touch screen can be serrated or equipped with a weakened tear seam 491. Relative to other forms of touch screens, Pryor states at column 27, lines 50-54: “Other touch screen types may also be advantageously slit or serrated or otherwise induced to break or disintegrate as well, **but many will not work properly in this mode due to disruption of acoustic or capacitive fields for example**. Again a big advantage of the instant invention.” There has been no articulated reason as to how any other touch device could possibly be made operable in Pryor’s system when Pryor excludes all other options except his own surface distortion design, especially in light of Pryor disclosing that the airbag/screen module **must** be of another design (presumably his surface distortion design).

Thus, it is believed that a *prima facie* case of obviousness has not been established since the underlying analysis employed to support the Patent Office burden in establishing a *prima facie* case of obviousness “should be made explicit.” *KSR Int’l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1738 [82 USPQ2d 1385, 1396] (2007). “[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 441

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F.3d 977, 988 [78 USPQ2d 1329] (Fed. Cir. 2006) (cited with approval in *KSR*, 127 S. Ct. at 1738 [82 USPQ2d at 1396]). There has been no articulated reason as to how the insulating layer 36 of Gillespie could be satisfactorily combined with Pryor and Neuman, or how Gillespie's object position detector could possibly be made operable in Pryor's system when Pryor excludes all other options except his own surface distortion design. For this additional reason it is believed that a *prima facie* case of obviousness has not been established that renders the pending claims obvious over the cited references.

In addition, a *prima facie* case of obviousness cannot be established with the absence of articulated reasoning having some rational underpinning to support the legal conclusion of obviousness. The inability of the Examiner to articulate which reference supposedly discloses an airbag cover is evidence that the Office has not met its burden in establishing the *prima facie* case of obviousness. The Office Action mailed on March 23, 2007 concedes at page 4 that Gillespie as modified by Pryor does not teach or suggest a capacitive touch sensor disposed between an airbag and an airbag cover. Neuman was cited as providing a sensor disposed between an airbag and an airbag cover. Now, the Final Office Action mailed on September 25, 2007 asserts that insulating layer 36 of Gillespie "is the airbag cover." Applicants' position is that a *prima facie* case of obviousness has not been established in this examination under any interpretation of the cited references.

For example, Gillespie if modified by Pryor in view of Neuman as suggested by the Examiner contradicts Pryor's Requirement 7 (column 4) that requires the touch screen not sacrifice airbag function, and "thus must not be where the airbag is, or the airbag/and screen module must be of another design." However, even if Gillespie is modified by Pryor in view of Neuman as suggested by the Examiner, the resulting device would necessarily place the insulating layer 36 of the sensing plane 10 of Gillespie behind airbag cover layer 702 of Neuman, which would fail to keep capacitive coupling large, as required by Gillespie at column 11, line 39.

Additionally, a *prima facie* case of obviousness cannot be established by picking and choosing references in a piece meal fashion. To establish a *prima facie* case of obviousness, the selected references must teach or suggest all claim limitations. *In re Royka*, 490 F.2d 981 [180

USPQ 580] (C.C.P.A. 1974). However, “[a] patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *KSR Int’l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1731 [82 USPQ2d 1385, 1389] (2007). In making an obviousness determination over a combination of prior art references, it is “important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.” *Id.* at 1738 [1396]. (Emphasis added).

The teaching of Pryor’s Requirement 7 (the touch screen “thus must not be where the airbag is”) removes any basis for a reason that would have prompted a person of ordinary skill in the relevant field to combine the Gillespie and Pryor elements in the way the claimed new invention does, as KSR requires. 127 S. Ct. at 1738 [1396].

A reference patent cited as a section 103 reference must be considered in its entirety, “*i.e.* as a *whole*, including portions that lead away from the invention.” *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1568 [1 USPQ2d 1593, 1597] (Fed. Cir. 1987), *cert. denied*, 481 U.S. 1052 (1987). That is, the Examiner must recognize and consider not only the similarities, but also the critical differences between the claimed invention and the prior art as one of the factual inquiries pertinent to any obviousness inquiry under 35 U.S.C. § 103. *In re Bond*, 910 F.2d 831, 834 [15 USPQ2d 1566, 1568] (Fed. Cir. 1990) (emphasis added).

Based on the scope and content of Pryor as must be analyzed under *Graham v. John Deere*, Pryor employs a variety of touch sensor screens 11-14 **in the center stack 5 area of a dashboard** (Figure 1c), but as relates to steering wheel touch screens 10, capacitive touch sensor screens “will not work properly in this mode due to disruption of acoustic or capacitive fields.” *Pryor* at column 27, lines 50-54. There is no reason or basis for one of ordinary skill in the art to force the contrary teaching of Pryor to fit with the disclosure in Gillespie, as the Examiner asserts. In fact, after reading each reference in its entirety, as a whole, including portions that lead away from the invention, one of ordinary skill in the art would not be led to combine Gillespie and Pryor.

Further, applicants maintain that reading Pryor as a whole demands the conclusion that the asserted combination of the references fails to render the pending claims obvious. Relative to

a touch screen employed with an airbag, Pryor at column 4, Requirement 7 and Column 27, lines 43-54 states that an advantage of his surface distortion system is that the material can be anything sufficiently transparent that sufficiently deflects light such that the touch screen can be serrated or equipped with a weakened tear seam 491. Relative to other forms of touch screens, Pryor states at column 27, lines 50-54: "Other touch screen types may also be advantageously slit or serrated or otherwise induced to break or disintegrate as well, but many will not work properly in this mode due to disruption of acoustic **or capacitive fields** for example." The Examiner asserts at page 2 of the Final Office Action (last four lines) that Pryor's statement of exclusion would apply to applicants' claimed invention, and if Pryor's surface distortion touch screen wouldn't work in a steering wheel, "then the invention in the current Application, wouldn't work, neither." The Examiner's logic is incorrect. **Applicants' claimed invention requires a capacitive touch sensor, the very element that Pryor excludes, and thus provides a solid foundation for the position that one of skill in the art would not view the pending claims as obvious.**

Moreover, the Examiner disagreed in the Final Office Action mailed on September 25, 2007 with applicants' position that Neuman's airbag cover renders Pryor's screen displays useless (the screen would not be visible) by taking the position at page 3 that "[T]he specific components of Pryor are not used for the combination." This position is contrary to the current state of the law, and fails to recognize and consider the critical differences between the claimed invention and the cited references as one of the factual inquiries pertinent to any obviousness inquiry under 35 U.S.C. § 103 as required by the Federal Circuit in *In re Bond*, 910 F.2d at 834 [1568].

A proper obviousness determination under *Graham v. John Deere* does not permit the Examiner to ignore the specific components of Pryor that teach away from the asserted combination. Explicit disclosures in a cited reference that teach away from the purported combination cannot be ignored, as this an essential part of determining the scope and content of the prior art as required by *Graham v. John Deere*. A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention.

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W. L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983); MPEP § 2141.20.

Claim 12 was rejected under 35 U.S.C. § 103(a) as unpatentable over Gillespie, Pryor, and Neuman and further in view of Nagasaka. Nagasaka is cited as disclosing a touch sensor button disposed within a spoke of a steering wheel. Applicant's position is that Nagasaka fails to cure the deficiencies of Gillespie as modified by Pryor in view of Neuman as described above. For at least this reason, claim 12 is not rendered obvious over Gillespie as modified by Pryor in view of Neuman and further in view of Nagasaka.

Claims 24-26 were rejected under 35 U.S.C. § 103(a) as unpatentable over Gillespie, Pryor, and Neuman and further in view of Reighard. The Office Action concedes that Gillespie as modified by Pryor and Neuman fails to teach or suggest disposing a capacitive touch sensor on a back surface of an airbag cover and molding the airbag cover using the molds so that the touch sensor is embedded in a back surface of the airbag cover. Reighard is cited as disclosing a method of implementing an electronic force sensing resistor in an airbag and molding the airbag cover to embed the sensing resistor in the cover. However, as described above, Reighard fails to cure the underlying deficiencies of Gillespie as modified by Pryor in view of Neuman. Consequently, claims 24-26 cannot be rendered obvious over Gillespie, Pryor, and Neuman and further in view of Reighard.

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CONCLUSION

Applicants submit that claims 1-38 are in condition for allowance and recite patentable subject matter not taught or suggest by the cited references. Withdrawal of the rejections and a Notice of Allowance for claims 1-38 is respectfully requested.

Any inquiry regarding this Amendment and Response should be directed to Steven Bern at Telephone No. (651) 733-2255 or Nicholas R. Baumann at Telephone No. (612) 573-0669. In addition, all correspondence should continue to be directed to the following address:

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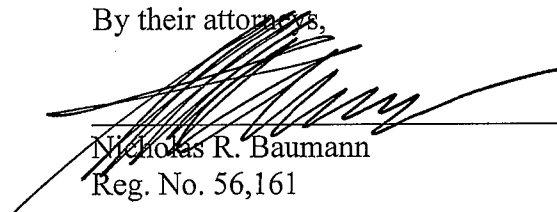
Respectfully submitted,

E. Scott Hagermoser et al.,

By their attorneys,

Date: Nov 16, 2007

NRB:imv



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